



### 4.2.3 Coconino County

#### Geography

Coconino County is a topographically diverse area with a wide range of climatic conditions, vegetation and wildlife. The County encompasses over 18,600 square miles and is characterized by deep canyons and rugged mountains. The County's most prominent watercourses include the Colorado River, Oak Creek, Chevelon Creek, Kanab Creek and West and East Clear Creek. The characteristics of the County range from sparsely vegetated shrublands to dense pine forests with small areas of desert scrub at the lower altitude extremes. The County is mapped into three ecoregions, Arizona Mountain Forest, Colorado Plateau Shrublands and Mojave Desert. The Forest elevations range from 4,000 to 13,000 feet, resulting in comparatively cool summers and cold winters. The Shrubland elevations range from 4,000-5,000 feet and temperatures can vary widely with warm summers and cool winters. The Desert elevations range from 1,500-4,000, resulting in very hot and dry summers and warm winters.

#### Population

In 2005, the County's population was 130,530. The county's population grew 12.2% between 2000 and 2005, which was more than half of the State's overall growth of 17.8% for the same period. The populations of the major incorporated communities in are shown below. Flagstaff is the County's seat and, with 61,185 residents in 2005, it is by far the most populous community among the County's incorporated places. Based upon the population projections illustrated, many of the communities in the County will continue to experience modest growth. The popular City of Flagstaff, in particular, is projected to grow to over 100,000 residents by the year 2040. Many of the other communities in the County, while continuing to experience growth, are constrained by topographical features.

Coconino County Population, 1990-2040							
Jurisdiction	1990	2000	2005	2010	2020	2030	2040
Coconino County	96,591	116,320	130,530	141,457	159,345	173,829	186,871
Flagstaff	45,857	52,894	61,185	71,981	81,972	91,529	101,907
Fredonia	1,207	1,036	1,110	1,507	1,671	1,811	1,945
Havasupai Indian Tribe	423	503	584	619	692	749	798
Hopi Indian Tribe	1,082	1,134	1,373	1,437	1,551	1,685	1,795
Page	6,598	6,809	7,110	11,128	13,057	14,841	16,714
Sedona (Coconino and Yavapai)	2,384	2,963	3,404	3,727	4,340	4,900	5,480
Williams	2,532	2,842	3,145	3,310	3,601	3,925	4,323
Navajo Nation	19,914	23,216	23,815	25,491	28,957	31,618	34,448
Note: Figures for 1990, 2000, 2005 from Arizona Dept. of Commerce. Figures for 2010-2040 from AZ DES (projections date from 1997).							
Source: Arizona Department of Commerce, May 2003; Arizona Department of Economic Security, February 1997.							

#### Economy & Labor Force

The major industries of the County are services, retail trade and public administration. Tourism also plays a significant role with such attractions as the Grand Canyon National Park, Oak Creek Canyon, Sunset Crater National Monument, prehistoric Indian ruins at Wupatki, Walnut Canyon, the Navajo National Monument, Snowbowl Ski Are and Lake Powell. 67,297 people constitute the civilian labor force, and the unemployment rate in the county is 5.3%, similar to the State average of 4.6% for 2005.

#### Historic Hazard Events

During the development of the original State of Arizona All-Hazard Mitigation Plan, a list of historic hazard events was compiled. Most counties researched local records and governmental databases to update and add records of recent hazards to the state compiled list for use in their plans. Additional hazard records were researched using the same criteria, with the exception that all damages greater than \$1 were included. Therefore, due to the variety of data sources and criteria, it should be kept in mind that the numbers reported reflect the availability of such data from those sources and the numbers are expected to under-predict the losses actually sustained over the past 30 to 40 years. A more thorough search for historic data in future planning efforts is mentioned in the county plans and encouraged by ADEM.

It is our hope that this data coupled with other risk assessment information will prove to be instrumental in assisting the County and State in future planning and mitigation efforts. We believe this can happen by this data accurately indicating which hazards we are most susceptible to; how damaging these hazards can be to us; and the damage costs or costs avoided through future mitigation projects.



Historic Record of Disaster Events in Coconino County								
Event Type	Statewide or Multiple County, Incl Coconino				Substantially Coconino			
	Total	Fatalities	Injuries	Loss \$	Total	Fatalities	Injuries	Loss \$
Drought	75	0	0	281,000	0	0	0	0
Earthquake	0	0	0	0	8	0	0	0
Flooding/Flash Flooding	2	15	0	570,471,000	10	18	10	9,330,000
Hazardous Materials Incidents	1	0	0	493,000	2	0	3	54,000
Landslides/Mudslides	0	0	0	0	1	0	0	8,000
Thunderstorms/High Winds	4	4	34	11,050,000	10	15	49	500,000
Tropical Storms / Hurricane	1	23	0	5,800,000	0	0	0	0
Wildfire	18	0	0	39,615,000	47	0	0	100,000
Winter Storms	5	13	0	527,000	4	15	65	1,590,000
Note: "Statewide or Multiple County, Incl Coconino" events met the 1 or more of the following criteria: at least 1 injury and/or fatality or Historical Significance. All had at least \$50,000 in reported Losses. "Substantially Coconino" events met 1 or more of the following criteria: at least 1 reported injury and/or fatality or Historical Significance. No minimum dollar amount for Losses was used. All information is derived from the best data available at the time.								
Source: Coconino County Multi-Hazard Mitigation Plan, FEMA Approved November 2005.								

### Vulnerability

Despite its massive land area, the County includes a relatively small number and modest proportion of population that is potentially vulnerable to hazards. The County has a young resident base, with 27.1% of its citizens under the age of 18 years and only 7.7% over the age of 65.

Coconino County Populations Potentially Vulnerable to Hazards, 2005				
Jurisdiction	Population			
	Total	Under 18 yrs	65+ years	Below Poverty Level
Arizona	6,044,985	1,607,966	773,758	840,253
Coconino County	130,530	35,374	10,051	20,363
As a % of County	100%	27.1%	7.7%	15.6%
As a % of State	2.2%	2.2%	1.3%	2.4%
Source: Estimates based on US Census Bureau data, 2007. Poverty Level as defined by US Census Bureau.				

Coconino County Dwelling Units Potentially Vulnerable to Hazards, 2005		
Jurisdiction	Housing Units	
	Total	Built Before 1970
Arizona	2,544,806	490,710
Coconino County	58,104	11,931
Source: Estimates based on US Census Bureau. Data, 2007.		

### Hazards & Mitigation Strategy

Using the results of the County's vulnerability and capability analysis and the goals and objectives, a list of actions/projects was formulated. The actions/projects were then evaluated and ranked using the STAPLEE procedure. Below are the top ranking identified hazards and their actions/projects as indicated in the County's Hazard Mitigation Plan approved by FEMA on November 17, 2005:

#### Drought

Action 1: Sponsor interagency and public seminars to coordinate efforts to mitigate damage and losses due to drought and develop a drought mitigation plan.

Action 2: Develop and adopt countywide water conservation standards, citing USGS precipitation records.

#### Flooding/Flash Flooding

Action 1: Require drainage reports for subdivisions and major developments specifying how runoff will be accommodated and environmentally sensitive lands that rely on surface water and groundwater will be protected.



### Wildfires

Action 1: Enhance PFAC Education Trailer and provide public information packets related to fire danger and mitigation measures (e.g. information on CWPP, fuels reductions, etc.)

Action 2: Expand education activities to include N AZ Home Show, public service announcements, public access TV and websites.

### Mitigation Strategy Progress

Through development of this Plan, the need to significantly refine the goals/objectives and actions/projects in our original Plan was evident. We believe this need is a result of the determination to focus the Plan more on natural caused hazards as other hazards are covered in their appropriate plans (i.e. health, terrorism, etc.). There is also much to be said about the increased amount of information available regarding hazard mitigation planning.

To encourage our jurisdictions to re-evaluate their Plan's Mitigation Strategy as well, each County was asked to indicate their action/project progress since the development of their Plan. In response to our request, the County provided the information below in June 2007:

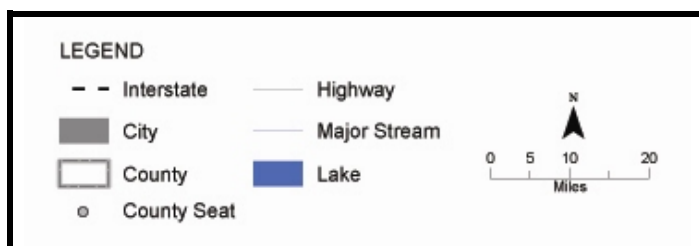
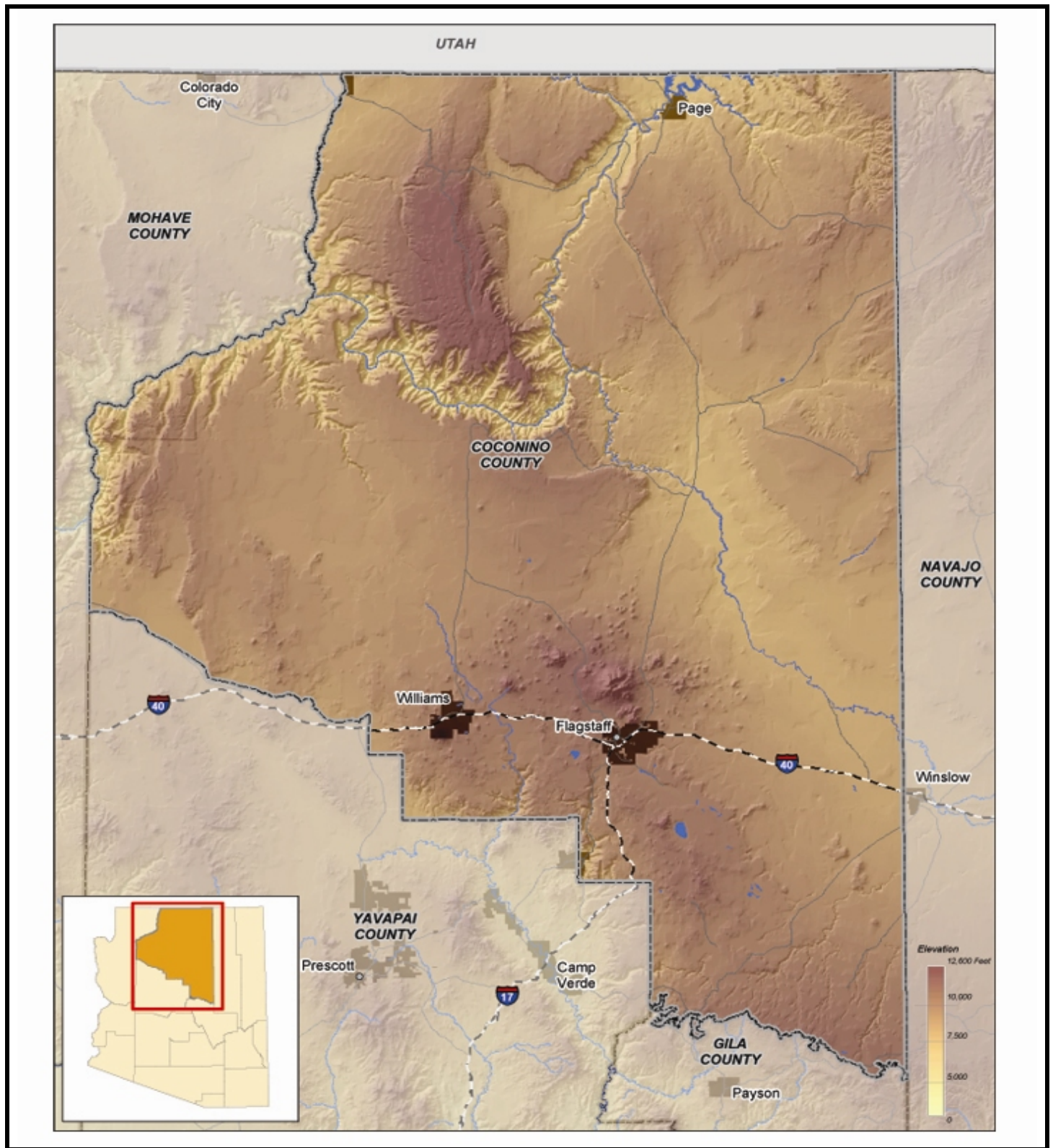
Action/Project Name	Action# in Current Plan	Hazard Mitigated	Progress Summary	Comments
Wildfire Public Education Activities	6.E.1	Wildfire	Ongoing efforts in partnerships w/PFAC. Outreach to home shows, newspapers, websites, etc. Est all 120K residents have rcvd some info.	Excellent effort.
Wood Distribution Network	7.A.1	Wildfire	Ongoing discussions. Little progress, no funding.	
GIS-Fire Data Layers	6.A.1	Wildfire	Need grant funding.	Not a priority.
Neighborhood Wildfire Assessments	6.D.1	Wildfire	City of Flagstaff, Summit Fire & Blue Ridge FD have participated in effort.	
Siren/Alert System	3.A.1	All	Sire system was orig approved for homeland sec fund but comms did not want sirens. We have now obtained funding for emerg notif system. Online 8/2007 (reverse 911).	
Small Diameter Wood Business	6.B.1	Wildfire	GFFP & County still working to promote. Several businesses are considering. Need fed & state \$.	County testified to this at congressional
Fire Dist Formation	6.A.2	All	Ongoing.	
County Wildland Mapping for GIS	6.D.2	Wildfire	Lack funding.	
Regional Fuels Crew	6.A.3	Wildfire	CREC provides hazard tree thinning efforts & assists in comm. Clean-up. According to county attorney, can't participate in fire suppression activities. Also trained as CERT volunteers.	
Roadside Thinning Project	6.B.2	Wildfire	NEPA compliance work is complete. Need grant funding to do thinning work.	

### Other Planning Mechanisms

During their planning process, the County staff reviewed and evaluated their resources and capabilities in the areas of Existing Plans, Policies and Ordinances; Technical Staff/Resources and Financial Resources. Although all resources are important to a community's ability to mitigate the effects of natural and human-caused hazards, we elected to ask the County to complete a survey indicating their legal and regulatory resources to be included in the Plan. We are pleased to receive feedback that reflects awareness of the need for regulations and guidelines that may have an effect on loss reduction. We believe such resources and capabilities can play a critical part in developing and maintaining a more disaster resistant community. The information below was provided by the County in June 2007:



	Yes or No	Approval Date	Responsible Authority	Plan Use/Comments
Plan/Policy/Ordinance				
Building Code	Y	1997 UBC	Comm Development	
Zoning Ordinance	Y	1981	Comm Development	
Subdivision Ordinance or Regulations	Y	1982	Comm Development	CC Subdiv Ord 82-3 Planning/Zoning
Special Purpose Ordinance	Y	1983	Comm Development	Floodplain Mgmt Zone Development Plan
Site Plan Review Requirements	Y	1964	Comm Development	Building permit process
General or Comprehensive Plan	Y	9/2003	Comm Development	
Capital Improvement Plan	Y	Yearly	County Manager	Each county dept.
Economic Development Plan	Y		GFEC Private/Public Partnership	Handled by Greater Flagstaff Econ Council, supported by County.
Emergency Response Plan	Y	2006	Emergency Manager	
Real Estate Disclosure Statement	Y	Unknown	State	No county req'mt
Source: Survey from ADEM to County Emergency Managers, 2007.				



State of Arizona  
Multi-Hazard Mitigation Plan

Map 5  
Major Features of  
Coconino County